

REMARKS

The Applicants respectfully request reconsideration of this application in view of the above amendments and the following remarks.

Specification

The Examiner has objected to the abstract under 37 CFR 1.72(b) because it contains implied phraseology.

Applicants respectfully submit that the Abstract has been amended to overcome the objection. Accordingly, Applicants respectfully request that the objection be withdrawn.

Objections

(1) Claims 1-7 have been objected to under 37 CFR 1.75(d)(1) because of an improper use of antecedent basis.

Applicants respectfully submit that the claims have been amended to overcome the objection. Accordingly, Applicants respectfully request that the objection be withdrawn.

(2) Claims 1-7 have been objected to under 37 CFR 1.75 for minor grammatical errors.

Applicants respectfully submit that claim 1 has been amended to overcome the objection. Accordingly, Applicants respectfully request that the objection be withdrawn.

35 U.S.C. §103(a) Rejection – Creemer and Lee

The Examiner has rejected claims 1, 3-8 and 10 under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 6,014,727 issued to Creemer (hereinafter “Creemer”) and in further view of U.S. Pub. No. 2006/0227799 to Lee (hereinafter “Lee”). The Applicants respectfully submit that the present claims are allowable over Creemer and Lee.

Claim 1 recites:

“A method comprising:

pre-registering each of a plurality of remote direct memory access (RDMA) buffers to a different connection of a plurality of connections;

determining that a pre-registered RDMA buffer of the plurality, which has been pre-registered for a given connection, has insufficient size to transfer data;

sending a control message indicating that a first larger RDMA buffer is to be provisioned for the given connection and that a receiving node is to provision a larger RDMA buffer;

receiving an acknowledgement message from a network corresponding to the control message, the acknowledgement message including information associated with communication with the larger RDMA buffer of the receiving node;

provisioning and registering the first larger RDMA buffer for the given connection, wherein a second larger RDMA buffer is not provisioned and registered for another connection of the plurality, and wherein a size of the first larger RDMA buffer is larger than a size of the pre-registered RDMA buffer; and

transferring the data to the network using the first larger RDMA buffer”.

Creemer and Lee do not disclose these limitations or render them obvious.

Creemer discusses in part allocating a first memory space in a memory of a server computer for buffering a first data portion. If a second data portion associated with the message is received at the server computer from the client computer, the method also includes writing the first memory space to a nonvolatile memory of the server computer. The first memory space may be unallocated. Then a second memory space in the memory of the server computer may be allocated for buffering the second data portion, the second memory space being larger than the first memory space.

Lee discusses in part dynamically allocating memory for RDMA data transfers. Lee discusses in part dynamically changing the size of a memory pool by dynamically allocating and de-allocating buffers.

However, Creemer and Lee do not disclose or render obvious “*sending a control message indicating that a first larger RDMA buffer is to be provisioned for the given connection and that a receiving node is to provision a larger RDMA buffer; receiving an acknowledgement message from a network corresponding to the control message, the acknowledgement message including information associated with communication with the larger RDMA buffer of the receiving node*”, in combination with the other claim limitations.

For at least one or more of these reasons, claim 1, and its dependent claims, are believed to be allowable over Creemer and Lee.

Independent claim 8 recites in part “*sending a message indicating that an RDMA buffer having a size larger than the predetermined threshold is to be allocated; receiving a message from a network corresponding to the message.*” Creemer and Lee do not disclose or render obvious these limitations. Accordingly, independent claim 8 and its dependent claims are also believed to be allowable.

35 U.S.C. §103(a) Rejection – Creemer, Lee and Kato

The Examiner has rejected claims 2, 9 and 15-19 under 35 U.S.C. §103(a) as allegedly being unpatentable over Creemer in view of Lee and in further view of U.S. Patent No. 4,805,168 issued to Kato (hereinafter “Kato”). The Applicants respectfully submit that the present claims are allowable over Creemer, Lee and Kato.

Claim 15 recites:

“A method comprising:

receiving a control message indicating to selectively provision an remote direct memory access (RDMA) buffer having a size larger than a pre-registered RDMA buffer for a given connection rather than for all connections;

provisioning the RDMA buffer;

sending an acknowledgement message indicating that the RDMA buffer has been provisioned and including information to communicate with the provisioned RDMA buffer;

receiving data into the provisioned RDMA buffer”.

Creemer, Lee and Kato do not disclose these limitations or render them obvious.

Creemer and Lee have been discussed above. Kato discusses in part a local area communication network.

However, Creemer, Lee and Kato do not disclose or render obvious “*sending an acknowledgement message indicating that the RDMA buffer has been provisioned and including information to communicate with the provisioned RDMA buffer*”, in combination with the other claim limitations.

For at least one or more of these reasons, claim 15, and its dependent claims, are believed to be allowable over Creemer, Lee and Kato.

35 U.S.C. §103(a) Rejection – Creemer, Lee and Official Notice

The Examiner has rejected claims 11 and 13-14 under 35 U.S.C. §103(a) as allegedly being unpatentable over Creemer in view of Lee and in further view of Official Notice (hereinafter “Official Notice”). The Applicants respectfully submit that the present claims are allowable over Creemer, Lee and Official Notice.

Claim 11 recites:

“A system comprising:

an interconnect;

one or more processors coupled with the interconnect;

a memory coupled with the interconnect to store data;

a network interface device coupled with the interconnect to transfer data to a network by using an Ethernet protocol;

machine-readable instructions stored and that if executed result in a machine performing operations comprising:

determining that a pre-registered remote direct memory access (RDMA) buffer that has been pre-registered for a given connection is too small to transfer data;

sending a message indicating that an RDMA buffer having a buffer size larger than a buffer size of the pre-registered RDMA buffer is to be provisioned;

receiving a message from a network corresponding to the sent message;

provisioning the RDMA buffer having the buffer size larger than the buffer size of the pre-registered RDMA buffer; and

transferring the data to the network using the provisioned RDMA buffer”.

Creemer, Lee and Official Notice do not disclose these limitations or render them obvious. In particular, Creemer, Lee and Official Notice do not disclose or render obvious “*sending a message indicating that an RDMA buffer having a buffer size larger than a buffer size of the pre-registered RDMA buffer is to be provisioned; receiving a message from a network corresponding to the sent message*”, in combination with the other claim limitations.

Creemer and Lee have been discussed above. The Official Notice does not pertain to these referenced limitations.

For at least one or more of these reasons, claim 11, and its dependent claims, are believed to be allowable over Creemer, Lee and Official Notice.

35 U.S.C. §103(a) Rejection – Creemer, Lee, Official Notice and Kato

The Examiner has rejected claims 12 and 20 under 35 U.S.C. §103(a) as being unpatentable over Creemer in view of Lee and Official Notice and in further view of Kato.

Claims 12 and 20 are dependent claims. Without admitting the appropriateness of this rejection, Applicants elect not to address the rejection of these dependent claims at this point.

Conclusion

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance. Applicants respectfully request that the rejections be withdrawn and the claims be allowed at the earliest possible date.

Request For Telephone Interview

The Examiner is invited to call Brent E. Vecchia at (303) 740-1980 if there remains any issue with allowance of the case.

Request For An Extension Of Time

The Applicants respectfully petition for an extension of time to respond to the outstanding Office Action pursuant to 37 C.F.R. § 1.136(a) should one be necessary. Please charge our Deposit Account No. 02-2666 to cover the necessary fee under 37 C.F.R. § 1.17 for such an extension.

Charge Our Deposit Account

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Dated: 11/11/09

By Brent E. Vecchia
Brent E. Vecchia, Reg. No. 48,011
Tel.: (303) 740-1980 (Mountain Time)

1279 Oakmead Parkway
Sunnyvale, California 94085-4040